



Attorney Docket No: IMMR-064/00US

PATENT

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re application of: Danny GRANT

Examiner: Unassigned

Serial No. 10/758,599

Art Unit: 2837

Confirmation No.: 5397

Filed: January 16, 2004

**COPY**

For: **METHOD AND APPARATUS FOR PROVIDING HAPTIC FEEDBACK  
HAVING A POSITION-BASED COMPONENT AND A PREDETERMINED  
TIME-BASED COMPONENT**

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## INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(b)

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 is provided on the enclosed CD.
- ☐ No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. \_\_\_\_\_ to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) \_\_\_\_\_ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to \_\_\_\_\_ application serial no. \_\_\_\_\_ and mailed on \_\_\_\_\_.
- ☐ Enclosed is a copy of a non-English publication(s) \_\_\_\_\_. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) \_\_\_\_\_. English language publication \_\_\_\_ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) \_\_\_\_ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) \_\_\_\_\_ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. \_\_\_\_\_.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☒ before the mailing date of a first office action on the merits; or
- ☐ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.


It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

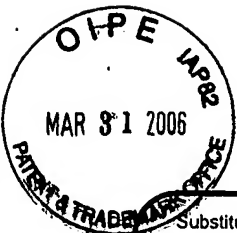
Dated: June 21, 2004

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Respectfully submitted,  
**COOLEY GODWARD LLP**

By: \_\_\_\_\_

  
Erik B. Milch  
Reg. No. 42,887



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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 10

## Complete if Known

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
Attorney Docket Number	IMMR064/00 US

## U.S. PATENT DOCUMENTS

Examiner	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
		2,972,140	2/14/1961	Hirsch	
		3,157,853	11/17/1964	Hirsch	
		3,220,121	11/30/1965	Cutler	
		3,497,668	2/24/1970	Hirsch	
		3,517,446	6/30/1970	Corlyon et al.	
		3,623,064	11/23/1970	Kagan	
		3,902,687	6/25/1973	Hightower	
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		3,911,416	10/7/1995	Feder	
		3,919,691	11/1975	Noll	
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		4,160,508	7/10/1979	Salsbury	
		4,236,325	10/2/1980	Hall et al.	
		4,262,549	4/21/1981	Schwellenbach	
		4,333,070	6/1/1982	Barnes	
		4,464,117	8/7/1984	Foerst	
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		4,708,656	11/24/1987	De Vries et al.	
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		4,787,051	11/1988	Olson	
		4,794,392	12/27/1988	Sellinko	
		4,795,296	01/1989	Jau	
		4,868,549	09/1989	Affinito et al.	
		4,885,565	12/5/1989	Embach	
		4,891,764	1/2/1990	McIntosh	
		4,896,554	01/1990	Culver	
		4,930,770	6/5/1990	Baker	
		4,934,694	6/19/1990	McIntosh	
		4,949,119	08/1990	Moncrief et al.	
		5,019,761	5/28/1991	Kraft	
		5,022,384	6/11/1991	Freels	

Examiner Signature		Date Considered	
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<sup>1</sup> EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Sheet **2** of **10****Complete if Known**

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		5,022,407	6/11/1991	Horch et al.	
		5,035,242	7/30/1991	Franklin	
		5,038,089	8/6/1991	Szakaly	
		5,044,956	09/1991	Behensky et al.	
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		5,212,473	5/18/1993	Louis	
		5,220,260	06/1993	Schuler	
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		5,437,607	8/1/1995	Taylor	
		5,451,924	09/1995	Massimino et al.	
		5,466,213	11/14/1995	Hogan	

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Sheet **3** of **10****Complete if Known**

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		Number Kind Code <sup>2</sup> (if known)			
		5,506,605	04/1996	Paley	
		5,542,672	08/1996	Meredith	
		5,547,382	8/20/1996	Yamasaki	
		5,550,562	08/1996	Aoki et al.	
		5,565,840	10/1996	Thomer et al.	
		5,575,761	11/19/1996	Hallanpour	
		5,583,478	12/1996	Renzi	
		5,589,828	12/1996	Armstrong	
		5,589,854	12/1996	Tsai	
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		5,880,714	03/1999	Rosenberg et al.	
		5,889,672	03/1999	Schuler et al.	

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Sheet **4** of **10****Complete if Known**

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		5,897,437	04/1999	Nishiumi et al.	
		5,912,661	06/1999	Siddiqui	
		5,914,705	06/1999	Johnson et al.	
		5,944,151	08/1999	Jakobs et al.	
		5,956,484	09/1999	Rosenberg et al.	
		5,959,613	09/1999	Rosenberg et al.	
		5,973,689	10/1999	Gallery	
		5,986,643	11/1999	Harvill et al.	
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		6,128,006	10/2000	Rosenberg et al.	
		6,154,201	11/2000	Levin et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,184,868	02/2001	Shaholan et al.	
		6,211,861	04/2001	Rosenberg et al.	
		6,219,034	04/2001	Elbing et al.	
		6,243,078	06/2001	Rosenberg	
		6,271,833	08/2001	Rosenberg	
		6,422,941	7/23/2002	Thomer et al.	
		6,448,977	09/2002	Braun et al.	
		6,469,692	10/2002	Rosenberg	
		6,563,487	05/2003	Martin et al.	

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**INFORMATION DISCLOSURE  
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Sheet **5** of **10****Complete If Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
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Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		EP	0349086		1/3/1990	Stork Kwant B.V.	
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	
		EP	0 265 011 A1		04/1988		
		EP	0 607 580 A1		07/1994		
		EP	0 626 634 A2		11/1994		
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		WO	WO 95/20788		08/1995		
		WO	WO 97/31333		08/1997		
		WO	WO 00/03319		01/2000		

**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990.	
		IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.	
		RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives, pp. 1-131, May 1990, archived 08/14/1990.	
		BROOKS et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," JPL Publication 85-11; NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985.	
		JONES et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990.	
		BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.	

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		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		SNOW et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4, with 45 pages of attachments, 06/15/1989.					
		OUH-YOUNG, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, pp. 1-369, 1990.					
		TADROS, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators, <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90.					
		CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.					
		ADELSTEIN, "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992.					
		GOTOW et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337.					
		STANLEY et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992.					
		RUSSO, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992.					
		KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.					
		PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.					
		ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90.					
		BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980.					
		BEJCZY et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISM-IFTOMM</i> , Sep. 8-12, 1981.					
		MCAFFEE, "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL D-5172</i> , January 1988.					
		MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95.					

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Sheet **8** of **10****Complete If Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
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